



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,094	09/12/2000	Ashok N. Rudrapatna	15-5	7322
46290	7590	12/27/2004	EXAMINER	
WILLIAMS, MORGAN & AMERSON/LUCENT 10333 RICHMOND, SUITE 1100 HOUSTON, TX 77042			KADING, JOSHUA A	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/660,094

Applicant(s)

RUDRAPATNA ET AL.

Examiner

Joshua Kading

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1, 6, 10, and 14 are objected to because of the following informalities:

5      Claim 1, line 5; claim 6, line 5; claim 10, line 5; and claim 14, line 5 state "the  
second subspaces". The term "the second subspaces" is not consistent with the claim  
language. Specifically, line 3 states "dividing a code space into at least two subspaces,  
where codes in the first subspace..." this suggests that each subspace is given a place  
in the order of subspaces, i.e. first, second, third, etc. Since there can only be one  
"second subspace," applicant should change "the second subspaces" to --the second  
10      subspace--. If applicant intends to incorporate more than the second subspace, clearer  
language should reflect this to avoid confusion.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

15      The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

20      (a) A patent may not be obtained though the invention is not identically disclosed or described as set  
forth in section 102 of this title, if the differences between the subject matter sought to be patented and  
the prior art are such that the subject matter as a whole would have been obvious at the time the  
invention was made to a person having ordinary skill in the art to which said subject matter pertains.  
Patentability shall not be negated by the manner in which the invention was made.

25      Claims 1 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
Bodin et al. (U.S. Patent 5,301,356) in view of Schilling (U.S. Patent 5,410,568).

Regarding claims 1 and 14, Bodin discloses "a method for partitioning code space in a communication system, comprising the steps of:

dividing a code space into at least two subspaces, where codes in the first subspace are assigned to at least one user at a time for a communication

5 session... (figure 6, elements 224 and 228 where the general channel comes from the first subspace (general channels subspace) and the reserved channels comes from the second subspace (reserved channels subspace), thus there are two subspaces; it is also noted that a channel, as is known in the art, represents a user or call in the system, thus each channel is assigned to one user; it should also be noted that  
10 although Bodin mentions channels instead of codes, it is known in the art that channels can be used as a generic term that includes the codes of a code division system as can be read in col. 1, lines 47-55);

assigning a first code to a user currently using a second code in one of the at least two subspaces (figure 6, elements 224, 228, 230 is the beginning process of  
15 setting up channels for handoff, whereby searching for a channel (code) in "this target BS" it is suggested that the user is currently using a second code of the first subspace but none are available, therefore the user searches for a code in the second subspace (reserved) and finds one that is then assigned to the user; figure 8 describes the steps in performing a handoff for a user currently using a channel); and

20 performing an in-sector handoff of the user from the second code to the first code (figure 6, element 230; col. 11, lines 22-23; it should also be noted that although the

handoff is not described as an "in-sector handoff", the same principles apply as noted by applicant in the specification, page 4, lines 7-10)."

However, Bodin lacks what Schilling discloses, that is "...where all of the codes in the second subspace are assigned to one user (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots; wherein each time slot is assigned to one user and each slot has access to all the codes in the subspace, but as is known in the art a user can only use one code at a time, therefore the user only uses one code from the subspace during its time slot)..." and "...all of the codes in the second subspace are assigned to one of a plurality of users on a time shared basis (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots)..."

It would have been obvious to one with ordinary skill in the art at the time of invention to include all codes in the second subspace assigned to one user on a time shared basis with the rest of the method for the purpose of having little or no interference between users. The motivation is to allow full duplex communication between a base station and user (Schilling, col. 1, lines 29-39 and 61-65).

Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin and Schilling as applied to claims 1 and 14 above, and further in view of Gilhousen (WO 95/03652).

Regarding claims 2 and 15, Bodin and Schilling disclose the methods of claims 1 and 14. However, Bodin and Schilling lack what Gilhousen discloses, that is "assigning

the second code to a different one of the at least two subspaces (page 1.1, lines 3-4 where the Walsh sequence is the second code and by reusing the second code in neighboring cells and sectors the code is assigned to a different subspace)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the assigning of the second code to a different subspace with the methods of claims 1 and 14 for the purpose of reusing the channel. The motivation is to not waste resources.

Claims 3, 6, 7, 10, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin et al. in view of Schilling and further in view of Gilhousen.

Regarding claims 6 and 10, Bodin discloses "a method for partitioning code space in a communication system, comprising the steps of:

dividing a code space into at least two subspaces, where codes in the first subspace are assigned to at least one user at a time for a communication session... (figure 6, elements 224 and 228 where the general channel comes from the first subspace (general channels subspace) and the reserved channels comes from the second subspace (reserved channels subspace), thus there are two subspaces; it is also noted that a channel, as is known in the art, represents a user or call in the system, thus each channel is assigned to one user; it should also be noted that although Bodin mentions channels instead of codes, it is known in the art that channels can be used as a generic term that includes the codes of a code division system as can be read in col. 1, lines 47-55);

assigning a first code to a user currently using a second code in one of the at least two subspaces (figure 6, elements 224, 228, 230 whereby searching for a channel (code) in "this target BS" it is suggested that the user is currently using a second code of the first subspace but none are available, therefore the user searches for a code in the second subspace (reserved) and finds one that is then assigned to the user); and performing an in-sector handoff of the user from the second code to the first code (figure 6, element 230; col. 11, lines 22-23; it should also be noted that although the handoff is not described as an "in-sector handoff", the same principles apply as noted by applicant in the specification, page 4, lines 7-10)."

However, Bodin lacks what Schilling discloses, that is "...where all of the codes in the second subspace are assigned to one user (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots; wherein each time slot is assigned to one user and each slot has access to all the codes in the subspace, but as is known in the art a user can only use one code at a time, therefore the user only uses one code from the subspace during its time slot)..." and "...all of the codes in the second subspace are assigned to one of a plurality of users on a time shared basis (col. 2, lines 10-20 and figures 8 and 10 where the signal is a coded signal with time shared slots)..."

It would have been obvious to one with ordinary skill in the art at the time of invention to include all codes in the second subspace assigned to one user on a time shared basis with the rest of the method for the purpose of having little or no

interference between users. The motivation is to allow full duplex communication between a base station and user (Schilling, col. 1, lines 29-39 and 61-65).

Bodin and Schilling also lack what Gilhousen discloses, that is "assigning the second code to a different subspace (page 11, lines 3-4 where the Walsh sequence is the second code and by reusing the second code in neighboring cells and sectors the code is assigned to a different subspace)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the assigning of the second code to a different subspace with the steps described by Bodin and Schilling for the purpose of reusing the channel. The motivation is to not waste resources.

Regarding claims 3, 7, 11, and 16, Bodin, Schilling, and Gilhousen disclose the methods of claims 2, 6, 10, and 15. However, Schilling and Gilhousen lack what Bodin further discloses, "wherein the user is using the second code in the first subspace (figure 7, elements 242 and 244 where the "unreserved" channels are taken to be part of the "general channels" in figure 6, and as seen figure 7 is a new call setup therefore, when the user enters a handoff mode as in figure 8, the user is currently assigned to a second code in the first subspace through the initial call setup in figure 7)." It would have been obvious to one with ordinary skill in the art at the time of invention to have the second code used in the first subspace for the same reasons and motivation as in claims 2, 6, 10, and 15.



Claims 4, 5, 8, 9, 12, 13, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodin, Schilling, and Gilhousen as applied to claims 1, 6, 10, and 14 above, and further in view of Arai et al. (U.S. Patent 5,907,545).

5           Regarding claims 4, 8, 12, and 17, Bodin, Schilling, and Gilhousen disclose the methods of claims 1, 6, 10, and 14. However, Bodin, Schilling, and Gilhousen lack what Arai discloses, that is "the first subspace is used for voice communication (figure 7, figure 14, element S1402 where if it is a voice communication it is clearly transmitted using the voice channels as in figure 7)." It would have been obvious to one with  
10   ordinary skill in the art at the time of invention to include the voice channels with the methods of claims 1, 6, 10, and 14 because voice transmission requires different transmission requirements than data (Arai, col. 1, lines 60-65). The motivation being that since both voice and data have different requirements for communication, there needs to be separate channels to have an effective voice/data system.

15           Regarding claims 5, 9, 13, and 18 Bodin, Schilling, and Gilhousen disclose the methods of claims 1, 6, 10, and 14. However, Bodin, Schilling, and Gilhousen lack what Arai discloses, that is "the second subspace is used for data communication (figure 8, figure 16, element S1601 where if it is a data communication it is clearly transmitted  
20   using the data channels as in figure 8)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the data channels with the methods of claims 1, 6, 10, and 14 because data transmission requires different transmission

requirements than voice (Arai, col. 1, lines 60-65). The motivation being that since both voice and data have different requirements for communication, there needs to be separate channels to have an effective voice/data system.

5

***Response to Arguments***

Applicant's arguments, see REMARKS, paragraph 2, filed 23 July 2004, with respect to the rejection(s) of claim(s) 3, 7, 11, and 16 under 35 U.S.C. 112 first paragraph have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a better understanding of applicant's claimed invention.

10

Applicant's arguments, see REMARKS, paragraph 2, filed 23 July 2004, with respect to the rejections of claims 1-18 under 35 U.S.C. 112 second paragraph have been fully considered and are persuasive. The 35 U.S.C. 112 second paragraph rejections of claims 1-18 have been withdrawn.

15

Applicant's arguments filed 23 July 2004 have been fully considered but they are not persuasive.

Applicant argues several points: 1) the general channels and reserved channels of Bodin are not the same as first and second code spaces and first and second codes as in applicant's claims; 2) Bodin does not teach that a user is currently using either a general channel or a reserved channel may be assigned to a channel in the other

20

subspace; and 3) the handoff of Bodin is not the same as an in-sector handoff of applicant's invention and that regardless of the principles involved in a handoff versus and in-sector handoff, Bodin still lack the teaching of the in-sector handoff. The examiner respectfully disagrees.

5           1) As stated in the rejection, col. 1, lines 48-53 of Bodin provide the link between a channel and a code in a code space. Further, in a CDMA system the different user channels are defined by their respective codes. Thus, when the word channel is mentioned with respect to a CDMA system, it is inherently known that each channel has a unique code that it communicates with. Therefore, although Bodin discloses channels,  
10       one of ordinary skill in the art would know that these channels are distinguished by their respective codes.

2) Although figure 6 does not explicitly teach that a user is currently using a channel before handoff, figure 8 as described in col. 11, lines 52-68 shows that a user's "call connection is transferred" (i.e. a user is currently using a channel before handoff).

15           3) As stated in the rejection, applicant's Specification, page 4, lines 7-12 specifically states that there is no difference between the procedure to achieve handoff, whether it be in-sector, between sectors, or between cells. And although Bodin in view of Schilling may not explicitly disclose an in-sector handoff, one of ordinary skill in the art would recognize that the procedure for handoff described in Bodin is equally  
20       applicable to the in-sector handoff of applicant's invention, as applicant admits.

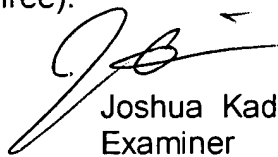
In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case however, Schilling provides proper motivation for the combination of the references to overcome the deficiency of Bodin. As described above, Bodin fully describes the handoff and thusly the in-sector handoff. Therefore, Bodin in view of Schilling fully reads on applicant's claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (571) 272-3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

- 5 For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joshua Kading  
Examiner  
Art Unit 2661

10 December 21, 2004



**BOB PHUNKULH**  
**PRIMARY EXAMINER**